

Flow control valve type SJ

Product documentation



Screw-in valve

Operating pressure p_{\max} : 315 bar

Flow rate Q_{\max} : 15 lpm



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1**Overview of 2-way flow control valve type SJ**

Flow control valves are a type of flow valve. They generate a set constant flow rate, largely independently of the load.

Type SJ flow control valves are screw-in valves. They can be integrated into the line system using housing.

For purely pump circuits, the excess oil flow on the inflow side must be discharged via a pressure-limiting valve.

Features and benefits:

- Oscillation damping and load-independent
- Compact screw-in valve

Intended applications:

- General hydraulic systems
- Industrial trucks
- Lifting equipment



Screw-in cartridge type SJ, model C



Housing version type SJ, model G

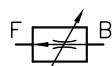


Housing version type SJ, model E and F

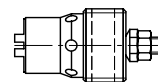
2 Available versions, main data

2.1 Screw-in cartridge (basic version)

Symbol:



Model:



Order coding example:

SJ 0	3	C	- 2
		Response flow	Factory-set response flow [lpm] at 50 bar
		Model	C - screw-in cartridge
		Flow rate setting	Table 1 Type and response flow
Type and size	Table 1 Type and response flow		

Table 1 Type and response current

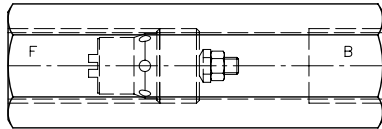
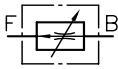
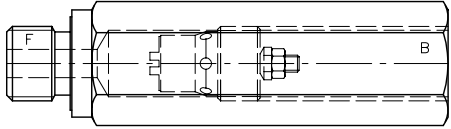
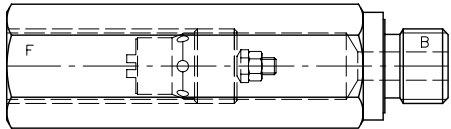
Type and size	Response current Q from ... to (lpm)							
	--	0	1	3	5	7	9	90
SJ 0	0.5 ... 0.9	0.25 ... 0.5	1.0 ... 1.6	1.6 ... 2.5	2.5 ... 4	4 ... 6.4	6.4 ... 10	10 ... 15

2.2 Housing version

Order coding example:

SJ 0	5	G	- 3
		Response flow	Factory-set response flow [lpm] at 50 bar
		Model	Table 2 Model (housing version)
		Flow rate setting	Table 1 Type and response flow
		Type and size	Table 1 Type and response flow

Table 2 Model (housing version)

Coding	Model	Circuit symbol
G		
E		
F		

3 Parameters

General information

Description	2-way volumetric flow control valve
Design	Screw-in valve and valve with housing
Design	Screw-in valve, valve for pipe connection
Material	Steel; electrogalvanised valve housing, hardened and ground functional inner parts
Installed position	Any
Port	<ul style="list-style-type: none"> ▪ B = port (pump or primary side) ▪ F = consumer (secondary side)
Volumetric flow direction	Working direction B→F: volumetric flow maintained constant Return volumetric flow F→B: possible, depending on the adjustment range (see Δp -Q-characteristics)
Hydraulic fluid	Hydraulic oil: according to Part 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448 Viscosity limits: min. approx. 4, max. approx. 1500 mm ² /s opt. operation approx. 10... 500 mm ² /s. Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.
Cleanliness level	ISO 4406 <hr style="width: 50%; margin-left: 0;"/> 21/18/15...19/17/13
Temperature	Ambient: approx. -40 ... +80°C, Fluid: -25 ... +80°C, Note the viscosity range! Permissible temperature during start: -40°C (observe start-viscosity!), as long as the service temperature is at least 20K higher for the following operation. Biologically degradable pressure fluids: Observe manufacturer's specifications. By consideration of the compatibility with seal material not over +70°C.

Pressure and volumetric flow

Operating pressure	$p_{\max} = 315 \text{ bar}$
Static overload nominal volume	Approx. $2 \times p_{\max}$
Volumetric flow	See Chapter 2.1, "Screw-in cartridge (basic version)" Table 1

Curves

Oil viscosity approx. 60 mm²/s



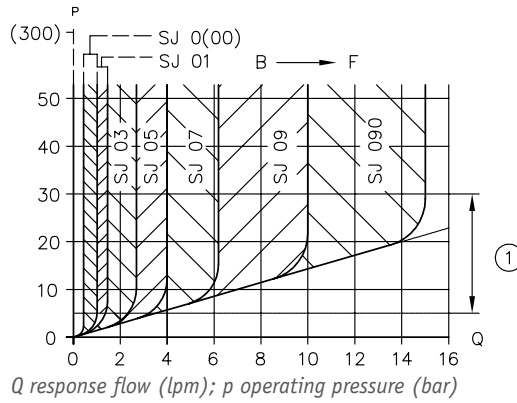
Caution

Risk of injury due to unexpected movement processes in the machine due to incorrect flow setting!

Risk of minor injury

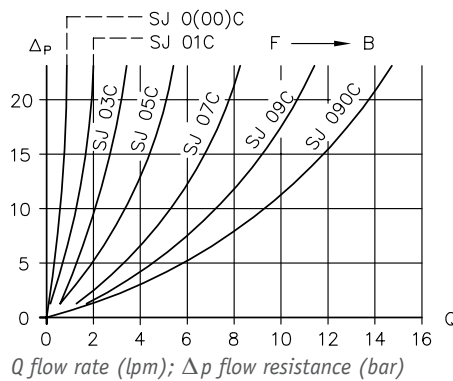
- Be prepared for unexpected, fast movements. On changing the flow settings, consumers will move more slowly or more quickly.
- Always monitor the pressure gauge when setting or changing the flow.

Operating direction B → F



1 Response starts at approx. 5 ... 30 bar

Flow direction F → B



Weight

Screw-in valve

Type

SJ 0..C = 35 g

Housing version

Type

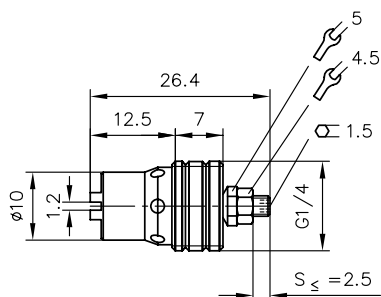
SJ 0.. G = 130 g
 SJ 0.. E = 130 g
 SJ 0.. F = 130 g

4 Dimensions

All dimensions in mm, subject to change.

4.1 Screw-in cartridge (basic version)

SJ 0.. C

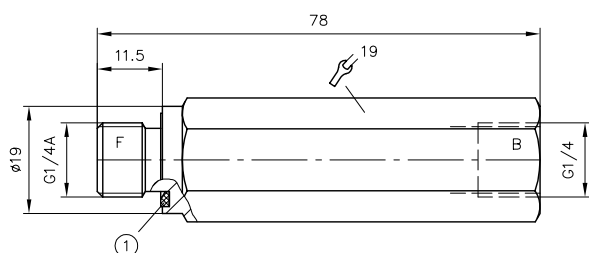


i Note
Screw in type SJ 0.. C until the end of the thread is reached and tighten it.

- Tightening torque: $M_{max} = 4 \text{ Nm}$

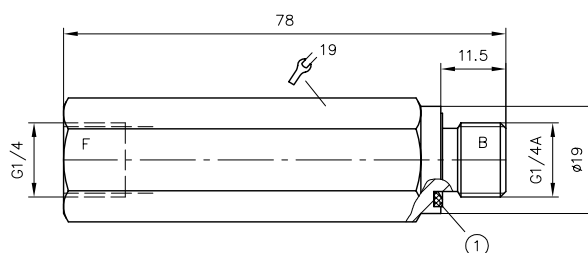
4.2 Valve with housing

SJ 0.. E



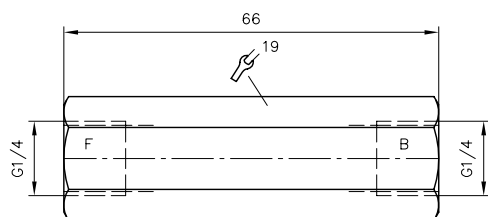
- 1 Fitting seal G 1/4 NBR

SJ 0.. F

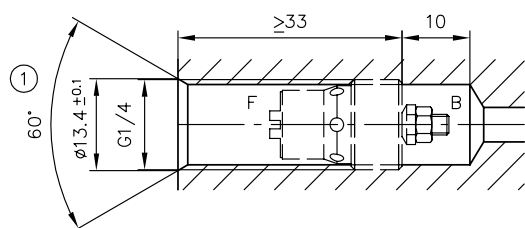


- 1 Fitting seal G 1/4 NBR

SJ 0.. G



4.3 Mounting hole



- 1 60° bevels to help the thread seal slip in, only on type SJ 0(00) C

5.1 Intended application

This valve is intended exclusively for hydraulic applications (fluid engineering). The valve meets high technical safety standards and regulations for fluid.

The user must observe the safety measures and warnings in this documentation.

Essential requirements for the product to function correctly and safely:

- All information in this documentation must be observed. This applies in particular to all safety measures and warnings.
- The product must only be assembled and put into operation by qualified personnel.
- The product must only be operated within the specified technical parameters. The technical parameters are described in detail in this documentation.
- The operating and maintenance manual of the specific complete system must also always be observed.

If the product can no longer be operated safely:

Remove the product from operation and mark it accordingly. It is then not permitted to continue using or operating the product.

5.2 Assembly information

The product must only be installed in the complete system with standard connection components that comply with market requirements (screw fittings, hoses, pipes, etc.).

The hydraulic system must be shut down correctly prior to dismantling; this applies in particular to hydraulic systems with hydraulic accumulators.

**Danger****Risk to life caused by sudden movement of the hydraulic drives when dismantled incorrectly!**

Risk of serious injury or death.

- Depressurise the hydraulic system.
- Perform safety measures in preparation for maintenance.

5.3 Operating instructions

Product configuration and setting the pressure and flow rate

The statements and technical parameters in this documentation must be strictly observed.
The instructions for the complete technical system must also always be followed.



Note

- Read the documentation carefully before usage.
- The documentation must be accessible to the operating and maintenance staff at all times.
- Keep documentation up to date after every addition or update.



Caution

Risk of injury due to unexpected movement processes in the machine due to incorrect flow setting!

Risk of minor injury

- Be prepared for unexpected, fast movements. On changing the flow settings, consumers will move more slowly or more quickly.
- Always monitor the pressure gauge when setting or changing the flow.

Purity and filtering of the hydraulic fluid

Fine contamination can significantly impair the function of a hydraulic power pack. Contamination can cause irreparable damage.

Examples of fine contamination include:

- Metal chips
- Rubber particles from hoses and seals
- Dirt due to assembly and maintenance
- Mechanical debris
- Chemical ageing of the hydraulic fluid



Note

Fresh hydraulic fluid from the drum does not always have the highest degree of purity. Under some circumstances the fresh hydraulic fluid must be filtered before use.

Pay attention to the cleanliness level of the hydraulic fluid in order to maintain faultless operation.
(Also see cleanliness level in [Chapter 3, "Parameters"](#).)

5.4 Maintenance information

This product is largely maintenance-free.

Conduct a visual inspection at regular intervals, but at least once per year, to check if the hydraulic connections are damaged. If external leakages are found, shut down and repair the system.

Clean the device surface of dust deposits and dirt at regular intervals, but at least once per year.

6 Other information**6.1 Accessories, spare parts and separate components**

Housing coding	For type	Order number
G	SJ 0	7395 017
	SJ 01 ... 090	6920 110
E, F	SJ 0..	6920 210 b

Further information

Additional versions

- Flow control valve (lowering brake valve) type SB and SQ: D 6920
- Flow control valve type CSJ: D 7736
- Flow control valve type DSJ: D 7825